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INCREASED AWARENESS

One of the major purposes of this newsletter is to increase awareness of the National Flood Insurance Program and floodplain management among community officials and the public in Montana. The more people who understand what is involved, the easier your job will be as floodplain administrator.

The Floodplain Management Section staff has met with several professional groups in communities across Montana-lenders, insurance agents, realtors, sanitarians, or others that may have some involvement with floodplain management. You may be able to become more effective in your community by increasing awareness concerning the program among other officials, realtors, lenders, or insurance agents. If you would like a member of our staff to visit your area and talk to such groups, let us know.

We also ask that you pass the "High Water" newsletter around to as many community officials as you can, especially to sanitarians and planners. If there is someone you know who would like to receive copies of "High Water," let us know. We will try to provide them—we have photo copies of past "High Water" issues available.

WARNING SIGNS

We have been considering having bright-colored flood warning signs made that can be posted in prominent locations, showing either previous high water levels or the base flood elevation. These signs could serve to inform prospective buyers that a flood hazard exists or they could be used as a reference point for establishing lowest floor elevations. They would have the added benefit of increasing public awareness.

This is the Height **ELEVATION** 0000.0 of the 100-year flood.

BRIDGES AND CULVERTS

Community expansion may bring a need for more stream crossings. Perhaps the easiest method of providing stream crossings consists of roadways on earth embankments with a small bridge or culvert to pass streamflows. Although from the standpoint of an initial capital expenditure this may be the most attractive solution, it is often the least desirable from a flood damage point of view. Inadequate bridges and culverts can increase flood heights and velocities and cause more severe damages than would normally occur in developed areas. Traffic can be disrupted as evacuation routes are shut off, and emergency services may be curtailed. Therefore, all future stream crossings should be designed to provide an adequate waterway opening and sufficient bridge clearance and roadway height above flood flows.

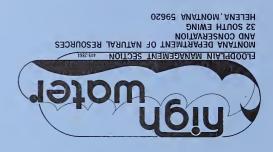
Before approval is given to begin construction of a bridge or culvert, hydraulic calculations should be made and submitted with an application for the floodplain development permit. It should be ascertained that flood heights will not be significantly increased. In areas where a floodway has been identified and water surface elevations have been determined, this increase must be

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During the highest flood of record -- When building, keep this in mind STATE DOCUMENTS COLLECTION

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limited to $\frac{1}{2}$ foot or less, according to state law. That's because a floodway is usually delineated in already developed areas or in areas with high potential for development.

Where there are no water surface elevations available and no floodway established, but a floodplain is delineated, the developer must provide sufficient information to determine the effects of the proposed bridge on flood flows. This includes hydrologic calculations that associate given flows with a frequency, such as a 100-year frequency, and detailed hydraulic computations that indicate the effects the proposed bridge will have on flood flows. A registered professional engineer should certify that flood heights and velocities will not be significantly increased.

We encourage you to forward these calculations along with requests for permits to build bridges and culverts to the Floodplain Management Section for review prior to granting approval.

WITH ENCROACHMENT Encroachment Normal Water Level Natural Bank WITHOUT ENCROACHMENT Flood Height Normal Water Level Normal Water Level

CHANGES

You may have noticed that we did not publish "High Water" in November. The Floodplain Management Section decided that during the winter months, "High Water" would be published every other month to give us more time to visit communities.

With this in mind, you may want to submit your own news items. If enough are received, we will continue to publish "High Water" monthly.

Just send us a typed copy of your news item and we will print it or contact you for more information. Graphics and cartoons are acceptable, too! The cleaner the copy the better.

You may have heard that the Subdivision Bureau of the Department of Health and Environmental Sciences has been closed due to lack of funds. It isn't known yet whether the Bureau will be funded by the legislature. Meanwhile, the Water Quality Bureau of DHES is taking over subdivision review. Steve Pilcher, Chief of the WQB, feels his staff is capable of handling these procedures.

If the Water Quality Bureau calls on you for assistance, please be as cooperative as you can—the Bureau helps us to achieve the goals of floodplain management. For instance, water quality regulations prohibit septic systems within 100 feet of a floodplain unless the waste is pumped out of the floodplain area. This restriction helps to keep structures away from the floodplains.

If you should need to contact the Bureau, here is the address and phone number:

Dept. of Health and Environmental Sciences Water Quality Bureau Room A206, Cogswell Building Helena, MT 59620 (406) 449-2406

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